Bryan W. Shaw, Ph.D., *Chairman*
Buddy Garcia, *Commissioner*
Carlos Rubinstein, *Commissioner*
Mark R. Vickery, P.G., *Executive Director*

RECEIVED
2010 NOV 30 PM 3:50
SUPERFUND DIV.
REMEDIAL BRANCH
6SF-P

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

November 23, 2010

Mr. Shawn Ghose
USEPA Region 6
Superfund Division (6SF-AP)
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Re: Comment Letter for the Star Lake Canal Tier 2 Remedial Investigation Report
Star Lake Canal Federal Superfund Site, Port Neches, Texas
TCEQ Identification No. SUP149

Dear Mr. Ghose:

The Texas Commission on Environmental Quality has reviewed the Tier 2 Remedial Investigation (RI) Report and has the following comments:

- The Tier 2 RI Report provided a great deal of analytical data on the different Areas of Concern (AOCs); however, this data was very compartmentalized and did not present any specific conclusions about the overall site assessment. The conclusion that the Tier 2 RI Work Plan objectives were met with the presentation of the Tier 1 and Tier 2 RI results appears to be a statement of opinion, as the Lines of Evidence (LOEs) were not clearly presented.

- It is noted that the human receptors' LOEs suggest complete exposure pathways, yet the human receptors are not considered complete in the conclusions. In particular, the Jefferson Canal Spoils Pile Area and the Molasses Bayou Downstream Watercourse Area exposure pathways are shown as complete in Figure 7.2, "Human Health Conceptual Site Model (CSM)". Please clarify the justification for the elimination of the human exposure pathway in areas where the CSM indicates complete pathways for human exposure.

- No recommendations for future activities were presented in the report. Please provide the recommendations for the next proposed activity. Is additional assessment recommended, or is the delineation considered complete?

- In addition to the above comments, please see the attached TCEQ Interoffice Memorandum, dated September 2010, containing comments from the TCEQ Ecological Risk Assessor.

9216324

Please contact me at (512) 239-1054 or pwinsor@tceq.state.tx.us with any questions or concerns regarding this project.

Sincerely,

Phillip Winsor, P.E.
Superfund Section
Remediation Division
Texas Commission on Environmental Quality

PW/cw

Enclosure

TCEQ Interoffice Memorandum

To: Phil Winsor, Project Manager; Superfund Section, Remediation Division

From: Larry Champagne, Ecological Risk Assessor; Technical Support Section, Remediation Division

Date: November 19, 2010

Subject: Star Lake Canal Superfund Site
Draft Tier 2 Remedial Investigation Report
September 2010

As requested, I have completed my review of the ecological aspects of this Remedial Investigation (RI) report, most of which were contained in the baseline ecological risk assessment (BERA) portion. As presented below, I do have several concerns, particularly with the lack of risk management recommendations and the conclusions of both the BERA and the RI.

General Comments:

A recommendation for how to proceed with the ecological evaluation should have been provided. The data quality objectives (DQOs) from the approved Tier 2 RI Work Plan are repeated in this report. All five of the ecological DQOs state that if the objective is exceeded that the potential risks will be further considered in either an additional tier of the RI or in the Feasibility Study for the Site. All five objectives were exceeded yet no specific recommendation for proceeding was provided.

Although the regulatory agencies requested on several occasions that the Star Lake Canal responsible parties provide a weighting of the multiple lines of evidence for the benthic invertebrates, no weighting was ever assigned in the final approved Tier 2 RI Work Plan. On many occasions, these lines seem to contradict one another; therefore, some rationale is needed to explain and support the statements in the conclusions that limit ecological risk to only a few locations.

Some attempt at grouping the results of the lines of evidence should have been made. Even if the lines of evidence were not weighted, tables that present the sample locations and identify the number of times each line indicated a potential risk could have been provided. Granted, this would have required that an assumption be made for the mean effects range-median (ERM)/ probable effects level (PEL) quotient approach. For example, it could be reasonably assumed that only those locations that fall into the medium-high and high priority categories be identified as potentially at risk. With this

013518

assumption and an additional column added that totals the number of times the lines were exceeded, Table 9-24 would have been much more informative. In addition, corresponding figures (maps) that depict sample locations where two or more and three or more lines indicate potential risk could be provided. These types of tools would be very useful in presenting an overall picture of potential risk to benthic invertebrates.

Regarding the ERM-Q/PEL-Q approach, the Tier 2 RI Work Plan states that if possible, samples that have the same priority would be grouped together for consideration of future remedial actions. It is not evident from the report if this occurred, so further elaboration is needed.

It is recognized that the number of COPECs available to be evaluated through the ERM-Q/PEL-Q approach is limited and that not all site COPECs are included in this analysis, although those classes that are included (metals, total PCBs, pesticides, and total PAHs) do represent some of the more notable COPECs. In addition, this line of evidence is the only line that evaluates potential effects of COPEC mixtures and therefore deserves extra consideration. Figures (maps) that identify (color-code) the sampling locations by category would be useful and would address the Tier 2 RI Work Plan statement about grouping together those samples that have the same priority for consideration of future remedial actions.

It is recommended that the hazard ratio (H) line of evidence used to assess potential risk to benthic invertebrates be modified to be more meaningful as the results indicate that every sediment sample failed this line. Currently, the benchmarks used in this approach are the initial effects levels from TCEQ guidance. It is preferred that the midpoint between the initial and second effects level be used instead as TCEQ identifies this value as a protective concentration level for benthic organisms. As it stands, every single sediment sample throughout the site has at least three H exceedances and all samples average twenty-one exceedances.

Throughout the report, all references to EPA documents regarding the Toxicity Unit approach are cited incorrectly. According to page 228 in the References section, these citations refer to Ecological Soil Screening Levels documents.

Specific Comments:

P. 144, Section 9.4 Exposure and Effects Assessment: It is stated here that in the event that the lines of evidence indicate contradicting assessment of potential risk to a receptor for a COPEC, the magnitude of exceedance of the benchmark or threshold value was evaluated to further assess potential risk. Although multiple lines of evidence

were conflicting, no discussion of this magnitude of exceedance could be found in the report.

P. 163, Section 9.5.1.4 Toxic Units: Additional discussion, beyond what was provided here and in the Uncertainty Assessment (Section9.5.3.2.7) is needed about this approach. For instance, how do the results vary if the BERA data only considered the same 16 PAHs from the SLERA data? Also, what do the results show if only the BERA data is used? The approved Tier 2 RI Work Plan does not mention the use of a site-specific uncertainty factor, so the appropriateness of its use is questionable.

P. 166-167, Section 9.5.1.6 Risk Evaluation for Upper Trophic Receptors: Risk was identified for three state-threatened species: the White-faced ibis, the Wood stork, and the Painted turtle serving as a surrogate for the Alligator snapping turtle. The risk to these protected species should be acknowledged in both the BERA conclusions (Section 9.6.4) and the RI conclusions (Section 12.0).

P. 177, Section9.5.3.2.7 Toxic Units: Given the limitations to this approach that are identified here, the use of uncertainty factors, and the variations from the EPA methodology, it is difficult to understand how this approach is recommended as the preferred method for evaluating cumulative effects of PAH mixtures on benthic organisms.

P. 183-190, Section 9.6.4 Upper Trophic Level Receptors: Statements made in this section appear to contradict subsequent statements made in Sections 9.7 and 12.0 regarding the risk to upper trophic level receptors being influenced by only a few locations. For example, on page 184 it is stated that "Risks to upper trophic level receptors indicate general risk from exposure to metals site wide." Also, for most of the upper trophic level receptors evaluated (i.e., Raccoon, Short-tailed shrew, Belted kingfisher, Spotted sandpiper, White-faced ibis, Wood stork, Bullfrog, and Painted turtle), no particular environmental media could be identified as the risk driver. As many of these receptors are wide-ranging, it is difficult to understand how statements that limit the risk to only a few locations can be made.

P. 190, Section 9.6.4 Painted Turtle: This receptor was evaluated as a surrogate for the state-threatened Alligator snapping turtle. Since risk was indicated to this receptor from several COPECs via its diet, a discussion should have been provided here or elsewhere that identifies the significant differences between the diets of these two turtles (e.g., much more fish and less vegetation for the Alligator snapping turtle) and speculates how this would affect the estimated risk. Even more appropriate would have been the inclusion of a separate exposure calculation that utilizes as much life history information as available for the Alligator snapping turtle, although it is acknowledged

that the BERA exposure factors in Table 9-8 did include an ingestion rate and percent sediment ingestion from snapping turtles.

P. 209, Section 12.0 Conclusions: Although potential risk to benthic invertebrates was acknowledged in the BERA conclusions, the conclusions here appear to downplay the ecological risk at the site by focusing on upper trophic level receptors. Statements like "the BERA determined that potential ecological risk exists for some of the receptors that utilize the Site from exposure to certain constituents" and "... there are only a few locations in either freshwater or saltwater areas that appear to be influencing much of the risk estimated to upper trophic level receptors" and "the majority of the sample locations at the Site do not appear to be significantly influencing risk to upper trophic level receptors" are misleading as widespread ecological risk is apparent for the benthic invertebrate community. Nowhere in this section is risk to benthic invertebrates mentioned. The conclusions would have been more informative had the locations indicating potential risk to the upper trophic level receptors been compared to those exhibiting potential risk to the benthic (and soil) invertebrates.